US005661824A

United States Patent [19]
Allebach et al.

[11] Patent Number: 5,661,824

[45] Date of Patent: Aug. 26, 1997

[54] **MAGNIFYING DIGITAL IMAGE USING MAPPING**

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[21] Appl. No.: **412,640**

[22] Filed: **Mar. 29, 1995**

Related U.S. Application Data

[63] Continuation of Ser. No. 227,764, Apr. 14, 1994, Pat. No. 5,446,804.

[51] Int. Cl.^{6} G06K 9/42; G06K 9/32; H04N 1/46; G06F 15/00

[52] U.S. Cl. 382/298; 395/128; 348/581; 358/528; 382/293

[58] Field of Search 382/298, 293, 382/299; 395/128; 348/581; 358/528

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[57] **ABSTRACT**

A method of magnifying a digital image based on an edge map. The image has many original pixels, with each pixel having a level, and the locations of the pixels having a resolution. The method to magnify the image includes the steps of producing an edge map with many boundaries from the digital image, projecting the edge map onto the digital image, generating one or more additional pixels in locations among the original pixels by manipulating the levels of one or more original pixels without crossing any boundaries set by the edge map, and expanding the distances between the pixels so that the resolution of the locations of the pixels becomes the same as the original pixels. In another preferred embodiment, the original digital image is enlarged to the size of the magnified image by extending proportionally the locations of the original pixels. Then the edge map is produced and projected onto the enlarged image to generate additional pixels. After the step of generating, the resolution of the locations of the pixels becomes the same as the original pixels.

11 Claims, 18 Drawing Sheets